

Running Head: Threat in Weapon Focus

Examining the Role of Threat in Weapon Focus

An Honors Thesis (HONRS 499)

by

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## Abstract

The weapon focus phenomenon occurs when a weapon is present and a witness tends to focus more on the weapon than on any other stimuli in the environment. Although there is a fair amount of research which suggests that the weapon focus effect does occur, there is not agreement as to why this phenomenon occurs. It has been proposed that threat, a precursor of arousal, may be the reason. Pickel (1996) performed a study in which threat was manipulated and found that perceived threat did not have an effect. To further investigate the role of threat in weapon focus, this study increased the saliency of threat by having the subjects read a vignette which increased their awareness of threat before watching a video. The results reinforced Pickel's findings that perceived threat does not cause the weapon focus effect.

### Examining the Role of Threat in Weapon Focus

Weapon focus refers to the notion that if a weapon is visible during the commission of a crime, witnesses to the crime tend to focus on the weapon and this negatively affects their ability to identify the perpetrator. Kramer, Buckhout, and Eugenio (1990) add that "weapon focus refers both to the heightened attention paid to the weapon and to reduction of attention toward and recall of these other stimuli" (p. 167). The other stimuli which are usually of interest include the clothing, face, and physical features of the perpetrator. Witnesses often have difficulty giving an accurate description of a perpetrator even when he or she has been within close range. A meta-analysis of the research on the weapon focus effect found that the presence of a weapon does in fact make a significant difference in eyewitness performance both in description of the perpetrator and in recognition in a lineup (Steblay, 1992). A substantial amount of research has established the weapon focus effect; however, there has not been decisive research explaining why it occurs. It is believed that recognition accuracy could be affected by the perceived level of threat that the witness or victim of a crime may feel if a weapon is involved.

The research on weapon focus refers to arousal and threat virtually synonymously, giving the impression that threat is the precursor to arousal. This belief is logical. It is highly plausible that a weapon may be threatening and instill arousal in a person, thus inhibiting his or her ability to perceive or focus on other environmental cues. Manipulation of threat has been a method used to test this hypothesis about heightened arousal. The findings have been mixed and rather inconclusive taken as a whole.

Maas and Kohnken (1989) manipulated threat using syringes as simulated weapons. The subjects were approached by an experimenter who was holding either a syringe or pen and either threatened to administer an injection as part of the

experimental manipulation, or did not. The hypothesis was that the syringe and threat of an injection would create such a high level of arousal in the subject that their recognition performance would be impaired. The study found a main effect for the mere presence of the syringe in terms of recognition accuracy, but no main effect resulted from threat of an injection with the syringe. People who saw the syringe were more likely to falsely identify the perpetrator from the lineup as well as reject other individuals in the lineup than the participants who did not see the syringe.

Another study which linked threat and weapon focus was a study by Johnson and Scott (1976). The participants were in two conditions, one emotion-arousing and one neutral. In the neutral condition a man entered the participant waiting area with greasy hands holding a pen and bickering about a machine. The emotion-arousing condition had a man enter the participant waiting area after a heated argument with bloodstained hands holding a letter opener. The participants who were in the high arousal condition recalled less about the description of the man than did the people in the neutral condition.

Tooley, Brigham, Maas, and Bothwell (1987) also did a study in which arousal was manipulated. It was hypothesized that increasing arousal may hinder recognition when attention is paid mainly to cues such as the weapon or other nonfacial cues. The participants either viewed photos while experiencing threat of electric shock and listening to white noise, or they were in the low arousal group which did not experience those factors. Tooley et al.'s data did not support the predicted interaction between attentional focus and arousal.

Pickel (1996) did a study in which threat was manipulated and found no effect. Pickel showed the participants a video which took place at a hair salon. In the video, a man entered the hair salon and approached the receptionist, exchanged words, although not audible, and left with money that the receptionist handed him. The man

then walked out of the salon and got into a car driven by someone else. The other conditions were identical, with the exception of what the man was carrying in his hand. The man carried different objects which manipulated threat and unusualness independently. The witnesses then completed a questionnaire that asked for a description of people in the video. Finally the witnesses were shown a photo lineup which included the man in the video. They were asked to identify the man in the video in the lineup if he was present. There was no main effect of threat, but there was a main effect of unusualness found among the conditions in the area of recall of the man's features. This particular study did not support the hypothesis that threat or arousal is a cause of weapon focus.

Since there has been a lot of disparity in the past research relating to the connection between threat and weapon focus, this study replicated Pickel's study, but made some important changes in order to further test the reliability of the evidence found which did not link threat to the weapon focus effect. The main idea behind the research was to increase the witnesses' sensitivity to threat and determine whether it influenced the weapon focus effect.

To heighten the witnesses' levels of sensitivity to threat, each person read a paragraph long vignette which was written from the point of view of the receptionist at the hair salon. The vignette discussed the receptionist's fears because armed robberies had been taking place in the area. The participants then watched one of three randomly assigned versions of the salon video. They viewed either an empty condition, a wallet condition, or a gun condition. The vignette was created to increase the witnesses' anticipation of threat. If threat is a cause of weapon focus, the manipulation should strengthen the weapon focus effect.

## Method

### Participants

Seventy-eight Ball State University students enrolled in introductory psychology served as participants as part of the class's requirement. Twenty-five students participated in the Empty condition, 27 in the Gun condition, and 26 in the Wallet condition. The participants were both male and female with no distinctions made to separate or examine the responses of men versus women. All of the subjects were sighted individuals with at least 20/20 vision corrected.

### Apparatus

A television and video cassette recorder were used to show the video of the scenes in the hair salon. The witnesses participated in the study in a testing room, equipped with standard school desks and chairs.

### Procedure

Participants were tested in small groups, with a few exceptions in which only one person showed up for the experiment and so was tested individually. They were told that they were going to view a brief video tape that did not have an audio soundtrack and to make sure they could see the television screen from where they were sitting. Following the signing of the consent forms, the participants were given the vignette to read, which was typed on individual pieces of paper so each subject could read it carefully, rather than the experimenter reading it to them. The vignette read:

Lately, working as a receptionist at a hair salon is not as safe as it used to be. Recently, there has been a series of armed robberies at other stores nearby. In a couple of cases, the employees were assaulted. As a receptionist, I am very fearful of encountering the robber. I am afraid he might hurt me. Each time a man walks in the door, I cringe because I

don't know if it is a customer or the robber. I can't wait until the police catch him.

After the participants finished reading the vignette, the paragraphs were collected from them and they viewed the video segment. The video took place in a hair salon which was fully visible and labeled with a sign at the beginning of the video. In the video, a man entered the store carrying either nothing, a wallet, or a gun. He extended his hand toward the receptionist while he interacted with her. The receptionist handed him money, and he walked out and got into a car which was driven by someone else. The participants were randomly assigned to either the Empty, Wallet, or Gun conditions of the video. Following the viewing of the video the witnesses were given a questionnaire that asked about the scenario they witnessed and asked for descriptions of the receptionist and the man who entered the salon.

Some of the questions were open cued recall questions such as, "What kind of pants was he wearing, and what color were they?" Other items were multiple choice, such as questions asking about the hair length and hair color of the receptionist and the man. The witnesses were also asked whether or not the man in the video was carrying anything, and if so, what it was. The correctness of this question varied depending on the condition the subject was in. One of the final questions on the questionnaire asked what the subject thought that the man was doing in the salon. A copy of the questionnaire can be found in the appendix.

When all of the witnesses finished the questionnaires, the experimenter collected them. The witnesses then came back to the experimenter's desk in the back of the room to make a choice from the photo lineup. There were five pictures in the photo lineup, all of men, taken from the mid torso up. Each man had on the same outfit, a white t-shirt and a navy baseball hat. A sixth option was available to the witnesses which was an index card that read "Not Pictured." The man in the video was

present among the lineup photos. After the participants made their lineup choice, they were asked to give a confidence rating of the accuracy of their choice. The witnesses were shown a scale of one to seven. One represented that the witness was not sure at all about their choice, and seven represented that the witness was absolutely sure of their choice. The witnesses were asked to point to the rating. The experimenter wrote down both the witnesses' lineup choice and their confidence rating. After each witness made his or her identification and rating, the subjects were debriefed and left the testing area.

### Results

Each questionnaire was scored by the experimenter. The experimenter put a sheet of paper over the top of the paper so the condition was not revealed to her while scoring to avoid any bias. The witnesses received points for correct information given about the scenario and the people involved. They lost points for incorrect information, except in the questions where they were asked to make a choice out of ones provided. The experimenter gave the witnesses who responded incorrectly to these questions a zero.

A one way ANOVA was performed on the memory scores regarding the receptionist in the video. The results did not show significance,  $F(2, 75) = .95$ ,  $p = .39$ . The mean scores for the recall of items regarding the receptionist in the Empty condition were ( $M = 9.56$ ,  $SD = 1.78$ ). The mean recall scores for the receptionist in the Wallet condition were ( $M = 9.38$ ,  $SD = 1.98$ ). For the Gun condition the mean recall scores regarding the receptionist were ( $M = 8.85$ ,  $SD = 2.03$ ). The recall scores for the man in the video also were not significant,  $F(2, 75) = 1.81$ ,  $p = .17$ . For the man in the video the means were as follows: for the Empty condition ( $M = 10$ ,  $SD = 2.72$ ), for the Wallet condition ( $M = 8.58$ ,  $SD = 2.77$ ), and for the Gun condition ( $M = 8.81$ ,  $SD = 3.05$ ).



A chi square test was performed on the lineup choices made by the subjects in their particular conditions. No significance was found,  $X^2(2, N = 78) = .32, p = .85$ . Witnesses who correctly identified the target reported somewhat higher confidence,  $t(66) = 1.82, p = .074$ . For the 40 witnesses who incorrectly identified the man, ( $M = 4.25, SD = 1.89$ ). For the 38 witnesses who correctly picked the man out of the lineup, ( $M = 4.89, SD = 1.18$ ).

The vignette discussed robberies which were taking place in the area. When asked what the man was doing in the salon, 68% of the witnesses in the Empty condition said he was robbing it, 42% of the witnesses in the Wallet condition said the man was robbing it, and 100% in the Gun condition said the man was robbing the establishment. These differences were significant,  $X^2(2, N = 78) = 21.31, p < .001$ . If threat is a cause of weapon focus, then witnesses who thought a robbery was occurring should remember less about the male target. However, the witnesses who said the man was robbing the salon as compared to the people who said otherwise scored very similarly on the recall,  $t(76) = .29, p = .78$ . For the 23 people who said he was doing something other than robbing the salon ( $M = 9.26, SD = 2.86$ ). For the 55 witnesses who thought the man was robbing the salon ( $M = 9.05, SD = 2.92$ ). A chi square test was performed to see whether the accuracy of the lineup choice was related to witnesses' decision about whether the man was robbing the salon. The results were not significant,  $X^2(1, N = 78) = .16, p = .69$ .

### Discussion

The hypothesis that the vignette, whose purpose was to increase the saliency of threat, would affect recall and recognition was not supported. These findings further support the research by Pickel (1996). These findings differed from the findings of Maas and Kohnken (1989) in the experiment with the syringe, in that recognition of the

perpetrator was not significantly different in conditions. However, this study revealed similar findings to Maas and Kohnken in that recall of cues of the perpetrator were not significantly different from the other conditions. My results also differ from the findings of Johnson and Scott (1976) who found that subjects in the high arousal condition did not do as well as the subjects in the low arousal condition of giving a description of the man in the scenario. However, this lack of support for the idea of threat or arousal being a precursor to the weapon focus effect is in agreement with the findings of Tooley et al. (1987), who also found that increased arousal caused by threat did not interfere with recognition.

It is likely that threat is a difficult thing to make salient for witnesses when the medium is a video rather than a real life situation. In addition, this reenactment was not violent in nature. Rather, the man entered the salon rather calmly. He did not grab the receptionist or attack her. This lack of violence used in our video may have limited the feelings of threat the witnesses experienced. In addition, our society sees weapons portrayed all of the time on television, so maybe the frequency has desensitized us to really feel threat when we witness something via television. In addition, weapons and violence are commonplace on the news virtually on a daily basis. Perhaps people do not experience threat when they feel that the weapon is not likely to be used, especially on them.

Even though the subjects in my study read the vignette prior to viewing the video, maybe it was not enough to increase the saliency of threat. However, I know that the participants in the study paid attention to the vignette because of the number of people who responded that the man was in the salon to rob the place. This idea was not planted into the minds of the subjects in Pickel's (1996) study, and fewer people who were not in the Gun condition hypothesized that the man was in the salon to rob the place. In my study, 68% of the subjects in the Empty condition speculated that the

man was in the salon to rob it. In Pickel's study only 33% of her sample made the same conjecture. In the Gun condition in both studies, 100% said that they figured the man was robbing the salon. This indicates to me that the subjects at least read the vignette.

With the inconclusiveness in regard to threat leading to weapon focus, perhaps researchers are focusing on the wrong causes of weapon focus. Perhaps the term "weapon focus" is not really the best description of the phenomenon which occurs. In Pickel's (1996) study, she did not find a main effect with the threat of the object, but did find a main effect in regard to the unusualness of the object in the context of the scenario. Loftus, Loftus, and Messo (1987) made a similar conjecture:

It should probably be mentioned that the tendency for subjects to fixate on a weapon (as opposed to a less threatening object such as a check), may simply reflect the tendency to fixate on any unusual object. Had we included an condition in which the customer pulled a banana out of his pocket and pointed it at the cashier, we may have observed an analogous result, namely, more frequent and longer fixations on the banana accompanied by poorer recognition memory for the face of the person holding the banana. (p. 61)

Results from Pickel's study suggests this same idea. In one of her conditions, the man entered the salon carrying a raw chicken. She found a main effect for unusualness and not threat in her study. More research needs to be conducted to examine whether it is the actual present of a weapon that leads to weapon focus, or is it the unusualness of the weapon in the context. If it is the unusualness which creates the problems with recall and recognition, then perhaps the phenomenon has been misattributed to weapons rather than unusualness.

My study really could not determine this, because my conditions did not include

any unusual objects in the context except for the gun. The Wallet condition was not unusual because a person would expect, or not be surprised to see, a person entering a salon with a wallet. It would have been prudent and interesting to add another condition with an unusual object, such as a raw chicken used in Pickel's study, to see the witnesses' results on the recall and recognition of the man. There is more research needed in this area because it is possible researchers have been mislabeling this phenomenon as weapon focus when there may be much more to it.

## References

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## Appendix

Last 4 digits of SS# \_\_\_\_\_

This questionnaire deals with the video clip you viewed earlier. Please answer each questions accurately as possible. All of your responses will be kept anonymous and confidential.

**Section 1: The Receptionist**

This section asks some questions about the female receptionist in the video.

1. In what kind of business establishment was the receptionist working?
2. What was she doing before the male character came in?
3. What kind of shirt was she wearing, and what color was it?
4. What kind of pants was she wearing, and what color were they?
5. Was she wearing a hat? If so, what did it look like?
6. Now write down anything else you can remember about the receptionist's clothing.
7. What was the receptionist's ethnic background?  
\_\_\_\_white \_\_\_\_black \_\_\_\_Hispanic \_\_\_\_Asian
8. How would you describe her height?  
\_\_\_\_tall \_\_\_\_short \_\_\_\_average height
9. How would you describe her body type?  
\_\_\_\_thin \_\_\_\_muscular \_\_\_\_overweight \_\_\_\_medium build

10. What color was her hair?

☐ light brown ☐ dark brown ☐ red ☐ black ☐ gray ☐ blonde  
☐ other (please specify) \_\_\_\_\_

11. How long was her hair?

☐ shaved ☐ short; above the ears ☐ over the ears  
☐ long; over the shoulders

12. About how old was she?

☐ late teens or early 20's ☐ mid to late 20's ☐ 30's ☐ 40's ☐ 50's

13. Did she have any unusual physical features (glasses, tattoo, scar)? If yes, please describe.

14. Now write down anything else you can remember about the receptionist's physical features.

## Section 2: The man

This section asks some questions about the male character in the video.

1. What kind of shirt was the man wearing, and what color was it?

2. What kind of pants was he wearing, and what color were they?

3. Was he wearing a hat? If so, what did it look like?

4. Now write down anything else you can remember about the man's clothing.

5. What was the man's ethnic background?

☐ white ☐ black ☐ Hispanic ☐ Asian

6. How would you describe his height?

☐ tall ☐ short ☐ average height

7. How would you describe his body type?

☐ thin ☐ muscular ☐ overweight ☐ medium build

8. What color was his hair?

☐ light brown ☐ dark brown ☐ red ☐ black ☐ gray ☐ blonde  
☐ other (please specify) \_\_\_\_\_

9. How long was his hair?

☐ shaved ☐ short; above the ears ☐ over the ears  
☐ long; over the shoulders

10. About how old was he?

☐ late teens or early 20's ☐ mid to late 20's ☐ 30's ☐ 40's ☐ 50's

11. Did he have any unusual physical features (glasses, facial hair, tattoo, scar)? If yes, please describe.

12. Now write down anything else you can remember about the man's physical features.

13. Was he carrying anything?

☐ yes ☐ no

14. If you answered yes to the previous question, please describe the object the man was carrying; otherwise skip this question.

15. What was the man doing in the business establishment?

16. Describe the vehicle he used to leave the scene.